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## General Informational and Background Statement

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### DEFENSE PLANNING BY THE U. S. DEPARTMENT OF AGRICULTURE

Defense planning in the U.S. Department of Agriculture is carried out in close cooperation with other agencies which include, in addition to the Office of Defense Mobilization and Federal Civil Defense Administration; the Department of Defense; Department of the Interior; Department of Commerce; Department of Labor; Department of Health, Education and Welfare; and the Interstate Commerce Commission.

Within the Department of Agriculture, defense mobilization planning is assigned to agencies already doing related work. This is an important concept since many activities of the Department have a direct bearing on essential functions in wartime and the same people would be called on to handle wartime problems. Defense food planning, as assigned by the Office of Defense Mobilization in Defense Mobilization Order I-9, with the exception of activities relating to continuity of essential functions of the Department, is coordinated by the Food and Materials Requirements Division of the Commodity Stabilization Service. Responsibility for coordinating activities relating to continuity of essential functions of the Department is vested in the Administrative Assistant Secretary. Responsibility for the coordination of Federal civil defense activities within the Department is vested in the Assistant to the Under Secretary. All these phases of defense planning are directed by the Under Secretary.

In developing plans under these various assignments and delegations, particular but not exclusive emphasis is placed on the situation which would result from attack on the United States. The starting point in this planning is ability to assess attack damage. The Department of Agriculture is developing data and methods which can be used by USDA to estimate the effects of an attack with nuclear weapons or weapons of chemical and biological warfare as soon as possible after the attack pattern and pertinent weather data are known. This is a difficult task because consideration must be given to radiation and radioactive fallout and chemical and biological effects, as well as direct damage resulting from blast and fire. Other procedures will permit the refinement of these initial estimates as time goes on. Damage estimates made by personnel of USDA will be supplemented with respect to certain effects of attack by nuclear weapons by data from the National Damage Assessment Center. These estimates of damage will contribute to an understanding of post-attack food requirements and supplies and availability of non-food materials and manpower needed for food production, processing and distribution. They will also provide background for special radiological defense activities, biological and chemical warfare activities and the control of fires caused by enemy action in rural areas.



The first part of the following statement deals with food resource planning carried on by the Department of Agriculture in accordance with Defense Mobilization Order I-9. The second part discusses the somewhat specialized responsibilities of the Department under FCDA Delegation No. 2, relating to biological and chemical warfare against and radiological defense of plants and animals, supplies of food for attacked and support areas, and fires caused by enemy attack in rural areas.

It should be noted that the assignments and delegations from ODM and FCDA are chiefly useful to the Department as a means of identifying the areas which are important in defense planning. While there are a few exceptions relating to such activities as priorities and allocations and requisitioning, most of the defense planning of the Department could be and is done under its regular program authority.

#### I. MOBILIZATION PLANNING FOR FOOD AS A RESOURCE

Although the United States is normally a surplus producer of many types of food, shortages of certain types of food or shortages in some areas could develop under wartime conditions. Unless corrective measures are taken, food problems could greatly limit the ability of the United States to resist and defeat enemy forces.

To avoid such problems, adequate defense food planning is vitally important. It is also important that this planning be done in advance of a war-time emergency. Time for detailed planning after an emergency develops will be very limited, particularly if it should start with an attack on this country with nuclear weapons.

Basically, of course, it is hoped that defense planning carried far enough will help to serve as a deterrent to any possible aggressor.

Defense Mobilization Order I-9, issued by the Office of Defense Mobilization under authority of the Defense Production Act, Executive Order 10480, the Strategic and Critical Materials Stock Piling Act and other authorities, assigns to the Secretary of Agriculture responsibility for the development of plans dealing with food as a resource under various mobilization conditions, including attack on the U.S. Provisions of DMO I-9 cover the following subjects, although in a more detailed fashion:

1. Periodic evaluation of requirements and supplies of food (including fibers, tobacco and oilseeds) and supporting non-food materials and facilities.
2. Identification and solution of any potential food supply problems.

3. Cooperation with other agencies to solve problems which relate to items not completely under the Department's jurisdiction.

4. Development of standby plans relating to the production, processing and distribution of food and the domestic distribution of farm equipment and commercial fertilizer.

5. Cooperating with the Office of Defense Mobilization in the development of stabilization measures as they relate to mobilization.

6. Cooperating with the Department of Labor and other agencies with respect to manpower.

7. Assisting the Office of Defense Mobilization in matters relating to stockpiles of strategic and critical materials.

8. Providing guidance and leadership in the development of plans and programs to assure continuity of vital food facilities in event of attack.

9. Development of plans to assure the continuity of essential functions of the Department in the event of attack.

The discussion of resource planning under Defense Mobilization Order I-9 will deal first with food as such, and secondly with non-food materials and manpower, without which the food program could not be carried out. Administrative planning designed to insure continuity of functions of the Department in an emergency will also be covered.

#### A. Defense Planning Relating to Food as Such

As used in this discussion, the term "food" is defined broadly as it is in Executive Order 10480 to include all commodities or products capable of being consumed by humans and animals, as well as fats and oils, naval stores, tobacco, wool, mohair, cotton, hemp, and flaxfiber until they lose their identity as agricultural commodities.

##### 1. Requirements and Supply Review

A starting point in any food planning is knowledge of the problem. This necessitates the analysis of the availability of food to meet requirements under current conditions and under various possible mobilization situations as well.

The techniques for determining requirements for and availability of food following attack on the U.S. must take into account the casualties and

food losses resulting from attack. The several "Operation Alerts" have resulted in analyses of the food situation under several different sets of assume post-attack situations.

The main purpose of requirements and supply analyses as far as the Department of Agriculture is concerned is to determine the methods to be used and the ability of the United States to supply necessary food in an emergency period and to point out problem areas. Requirements and supply analyses help the Department to determine policies with respect to food stockpiling for defense, and the adequacy of domestic production capacity. These analyses are a basis for the standby readiness plans which must be available in event of an emergency, and they would be a useful starting point for requirements and supply evaluations necessary after the emergency begins.

In connection with the first phase of a government-wide requirements and supply study, sponsored by the Office of Defense Mobilization, estimates were prepared for food in a period of full mobilization. This study was completed in 1953 and was revised in 1956 in connection with a second round of government-wide studies which cover full mobilization with and without attack on the United States. Another similar review for food and other "essential survival items" is now being developed.

Special food requirements and supply analyses are made for particular regions such as New England where, due to transportation problems, supplying food is likely to be a more serious problem in event of attack than it might be elsewhere.

Other specialized requirements and supply analyses are made of agricultural commodities such as castor oil and extra long-staple cotton which are included by the Office of Defense Mobilization on lists of critical and strategic commodities for stockpiling purposes. These analyses are made in cooperation with the Office of Defense Mobilization.

Without going into detail on findings to date, a few basic points on probable availability of food supplies in the United States under emergency conditions follow:

a. Food shortages on a nation-wide basis are not likely to appear immediately after outbreak of war.

b. It is possible that the drain of unusual wartime requirements could cause shortages in supplies, should we have full mobilization without an attack on this country. This could result from increased demand for certain types of food by consumers with an increased supply



of money to spend for food and from increased demand from the military and from foreign allies. Any shortage of non-food consumer goods would intensify the likelihood of such problems. It should be noted, however, that shortages of a few types of food would not necessarily mean an inadequate total supply of food. The types of food in short supply would either go up in price or have to be rationed in order to persuade consumers to use other foods in more plentiful supply.

c. While post-attack food supplies on a per capita basis are likely to be at least equal to present rates of use for most types of food and for total food, a few kinds of food may be in relatively short supply. This would be particularly true of such imported commodities as coffee, tea and sugar, which are produced not at all or in insufficient quantities in the United States. Under attack conditions, shortages of many foods are likely to appear immediately only in those areas where transportation and production have been severely disrupted and most stocks have been destroyed. Difficulty in distributing food will probably be the major problem since the normal commercial food trade channels are likely to be disrupted and new methods of channeling food from farmers and processors to retail stores and consumers will have to be developed.

In addition to food requirements and supply studies relating to the continental United States under mobilization conditions, the Department is interested in the food supply situation of friendly countries, and participates actively in work of the Food and Agricultural Planning Committee of the North Atlantic Treaty Organization and in other related surveys.

The following discussion will indicate several types of planning designed to eliminate or alleviate potential food supply problems under wartime conditions.

## 2. Food Stockpiles

Since supplies of domestically produced foods are likely to be adequate on a national basis following an attack, it is not necessary to augment such supplies with a special national food stockpile. However, if a national shelter program is undertaken, then a national stockpile of non-perishable foods should be built up and stored in such shelters. Stockpiling of some imported foods may be desirable if it is anticipated that ocean shipping will be unavailable or drastically curtailed, and stockpiling in some of the territories may also be justified due to their dependence on other areas and possible transportation difficulties. These are essentially the conclusions of a report on stockpiling which was prepared under the Agricultural Act of 1956 and submitted to the first session of the 85th Congress.

Any food shortages which exist in the immediate post-attack period will be largely of a local nature and will be remedied most effectively by local action, including action by individual householders. For example, it is important for individual householders to keep an adequate supply of food in the home or home shelter. It is also important for local and state governments to assume responsibility for essential and equitable distribution of retail food supplies to back up home supplies and other stocks. The Department of Agriculture will support all of these efforts through its programs to maintain the production of the essential food supplies and to insure that proper weight is given to the needs of all food users and geographical areas in the allocation and nation-wide distribution of available supplies.

The Department of Agriculture cooperates with the Office of Defense Mobilization in providing non-food agricultural commodities for the National Stockpile - a subject which will be discussed in greater detail later.

### 3. Domestic Capacity to Produce

Long range survival under emergency conditions depends in large measure on ability to produce food in sufficient quantities. While the productive capacity of the food industries in the United States is generally adequate, certain actions are being taken now which have a direct bearing on ability to produce food in an emergency.

While the program for the domestic production of castor beans is no longer active, the Department maintains a stock of castor bean seed and equipment, and the experience of conducting this program in the past has placed the Department in a position to help farmers to expand production quickly if the need should arise. Seed stocks to permit quick expansion of production are also maintained for certain other critical and strategic agricultural commodities, most of which are non-food items.

### 4. Vulnerability of Food Stocks

To assure that adequate food will be available in case of emergency, an effort is being made to protect and increase accessibility for emergency use of stocks which have been acquired by the Commodity Credit Corporation as a result of normal program operations. Under a policy approved by the Board of Directors of the Commodity Credit Corporation in February 1956, defense criteria are included among the factors to be considered in the location of CCC stocks. These criteria relate to the reduction of vulnerability, and to increasing accessibility for use in event of attack. Some stock movement to non-vulnerable locations has taken place in response to this policy.

The policy contemplates that these same criteria will be considered when the Commodity Credit Corporation builds or finances new storage through guarantees of occupancy or other means.

## 5. Standby Plans and Orders

The Department of Agriculture is developing standby food plans and orders which would become effective under emergency conditions. These include measures which would be needed in connection with damage assessment, requirements and supply evaluation, allocations, production and procurement. A notice designating the claimant agencies which will submit emergency food requirements to the Department of Agriculture has been published in the Federal Register (22 F.R. 10964). Some basic standby orders have been drafted dealing with such subjects as hoarding, setting commodities aside as an aid in procurement, priorities and requisitioning commodities. Additional plans and orders are required for specific commodity and functional areas and these are being prepared as rapidly as possible.

These standby plans and orders help to implement basic action steps in Plans C and D-Minus. The Department has worked closely with the Office of Defense Mobilization in the development of a so-called "Plan C" for food which covers actions necessary in event of war without attack on the United States, and in the development of a "Plan D-Minus" for food which is concerned with actions which the Department would be prepared to take immediately in the event of attack on the United States with nuclear weapons.

Assuming a war of limited scope or a general war without direct attack on the United States with nuclear weapons, the Department can draw heavily on experience of the Korean period and of World War II. With some modification, the detailed plans developed then could be utilized again.

The situation which would result from attack on the United States is, of course, without precedent in this country and planning is more difficult. For this reason, particular attention is being given to standby plans adaptable to an attack situation. Some plans of this type have been drafted and others are in process.

## B. Defense Planning Relating to Supporting Non-Food Materials and Manpower

### 1. Non-Food Materials and Facilities

#### a. Requirements

The Department of Agriculture is primary claimant for materials for construction purposes and for machinery, equipment and supplies for food



production, food processing and food distribution. It is, however, not responsible for the production of these vitally important items of non-food materials and equipment. In this connection, the Department works closely with the Department of the Interior on fuels and energy, the Interstate Commerce Commission on transportation and storage, and with the Department of Commerce on other essential items such as farm machinery, food processing machinery, containers, etc. The Department assists food processors and, on request, is prepared to assist non-food requisite producers and handlers to solve special problems that may arise.

Basic requirements and supply data are maintained currently for the non-food materials such as fertilizers, pesticides, farm machinery equipment and supplies, food processing machinery and equipment, and containers and supplies.

In some cases, current data are published. For example, the Department publishes annually the "Pesticide Situation". This publication presents the general outlook for the different pesticidal materials. It includes information on production and consumption of a number of the insecticides, fungicides and herbicides which are in greatest use. It also forecasts future requirements. During the past few years, the Department has cooperated with industry in collecting data on inventories of pesticidal chemicals. There are probably few lines of products which have changed as radically since World War II as pesticides. Many of the most important ones in use today were unknown until after World War II, and several of these have been available commercially less than five years. Not only has there been this very great change in the kinds of pesticides used in agriculture, but the volume of insecticides now consumed when expressed in equivalent insect-killing power of the older arsenicals, for instance, has increased perhaps 8 to 10 times.

The "Fertilizer Situation" is also published on an annual basis. This publication contains data on trade deliveries of the primary plant nutrients, nitrogen, phosphorus and potash to agriculture, and forecasts available supplies for the coming year. The use of commercial fertilizer has increased tremendously since World War II. For instance, at the beginning of World War II, fertilizers containing about 400,000 tons of nitrogen were being used annually by domestic agriculture. In the fiscal year 1950-51 this had increased to about 1,240,000 tons of nitrogen, and in 1956-57 nearly 2,300,000 tons were supplied to U.S. agriculture. Consumption during the present fiscal year is expected to be slightly higher than a year ago.

As part of the first round of the government-wide requirements and supply study, estimates of non-food materials were prepared for a period of full



mobilization without attack on the United States and were submitted to the Office of Defense Mobilization in 1953. In the second round, made in 1956, requirements and supply were again evaluated for full mobilization.

It is apparent from studies to date that shortages of transportation, electric energy, fuels and other non-food items would seriously impair our ability to produce and distribute food and that food supplies would be reduced under attack conditions. It would be unnecessary, however, as a result of casualties to consumers and damage to industry to maintain the present levels of food production. It is also apparent that an attack on this Nation would cause adjustments in the present methods of food production and processing. It would probably be impossible to continue all of the "food processing services" which now minimize the work connected with food preparation in the home. In a post-attack period, for example, consumers would probably find proportionally less frozen meats and more fresh meat; they would have to depend much more on locally produced "in season" fruits and vegetables. A shortage of cans would mean less canned foods for civilians. The requirements for all types of production and processing requisites would reflect the drastically altered pattern for the type of food supplied to consumers.

We would require mechanized equipment even in a post-attack period since the trend toward mechanization of food production is irreversible. For example, at the beginning of World War II, we had about 1.8 million wheel and crawler tractors on farms. On January 1, 1951, just prior to Korea, we had 3.6 million, and on January 1, 1958, it is estimated that there were 4.4 million wheel and crawler tractors in use on U.S. farms. During this same period, from the beginning of World War II to date, the number of farms has declined about 20 percent, or about 6.3 million to 4.8 million. Similarly, the farmer has become more dependent on electrical energy as a source of power. In 1942, about 38 percent of the farms were electrified, while today approximately 95 percent of all farms are electrified.

It would be impossible even under the most critical conditions to revert to the increased use of manpower or the increased use of horses for power on the farm because horses are no longer obtainable. The only recourse is to maintain our sources of electrical power and to keep our farm machinery operative.

The importance of requisites such as transportation, electric energy and fuels to food production and distribution in an emergency has been called to the attention of the agencies primarily responsible for them. In the longer range mobilization period it will be particularly important to have the necessary materials and equipment for repair and maintenance so as to keep the essential parts of highly mechanized food industries in operation.

b. Stockpiling of Non-Food Materials

The Department of Agriculture participates with the Office of Defense Mobilization and other agencies in the formulation of goals for non-food items in the National Stockpile.

In this connection, technical assistance is provided in the development of basic data for strategic agricultural commodities, most of which the United States does not produce or produces in insufficient quantities. The Department also conducts research on improved varieties, production methods for certain strategic agricultural items and substitutes for strategic and critical materials. Although agricultural in nature, many of these commodities fall outside the food category.

The Department has been instrumental in acquiring substantial quantities of non-food strategic materials through the barter of surplus agricultural commodities owned by the Commodity Credit Corporation. Strategic materials acquired in this manner are transferred to the National Stockpile wherever possible. If they are not needed immediately for the National Stockpile or other authorized disposition, they are held in CCC inventory.

In May 1957, a revised barter program was announced. Under this program the proposed barter transaction must mean a net increase in U.S. exports of the agricultural commodity involved. The commodity or commodities must be designated in the barter contracts and the commodity must be exported to one or more designated friendly countries. Materials for which the exchange is made must also be designated and must be limited to materials in friendly countries not produced in the U.S.

Barter transactions for strategic and critical materials since the program began in 1949 have totaled \$849 million, of which \$777 million have been accounted for since July 1954. Deliveries of strategic materials from July 1, 1954 through December 31, 1957 amounted to \$568 million, of which approximately \$130 million were transferred to the strategic stockpile and \$273 million to the supplemental stockpile. About \$171 million of strategic and critical materials delivered under barter contracts were being held in CCC inventory.

Since the beginning of the barter program, some 16 different agricultural commodities have been used in exchange for a large group of strategic materials. Of the agricultural commodities, by far the largest volume was accounted for by wheat. Strategic materials acquired include anti-mony metal, beryl ore, cadmium, industrial diamonds, high carbon ferrochrome, ferrochromium-silicon, ferromanganese, fluospar, crude iodine, manganese ore, and palladium.



c. Continuity of Industry Program

At the request of the Office of Defense Mobilization, the Department of Agriculture analyzed the vulnerability to attack damage of major food industries in the United States. To date the analyses of about 29 industries have been completed and submitted to the Office of Defense Mobilization. These analyses reveal that some of the industries present definite vulnerability problems. This is true, for example, of cane sugar refining, corn refining, dextran, cotton linters pulp, wheat flour, meat packing, yeast and cold storage.

As one means of solving these problems, the Department has published a guidebook called "Defense Guides for Commercial Food Facilities" which outlines the various steps which food industries should consider in reducing attack hazards and equipping themselves to continue operations even if an attack should occur. This guidebook was developed in cooperation with industry representatives and has been distributed with their help. The Department is also preparing to work directly with the food industries which present special vulnerability problems.

In the course of analyzing the various food industries, detailed data on more than 10,000 individual facilities have been assembled. Similar detailed data have also been prepared for about 500 facilities which support the food industries. The location of those facilities in 70 critical target areas have been plotted on maps as an aid in identifying some of the major vulnerability problems and as an aid in damage assessment if an attack should occur.

Each map has three separate transparent overlays. The first shows food industries, the products or services of which are generally of nationwide importance. They include such industries as cold storage, meat slaughtering, yeast plants, sugar refining, to mention just a few.

The second overlay includes facilities vital to the production, processing and distribution of food. These facilities include manufacturers of tractors and other farm machinery, food processing machinery, can plants and the like.

The third overlay shows food industries of local or area importance and includes such industries as bakeries, wholesale groceries and dairy plants.

d. Standby Plans and Orders

The Department is considering the means by which it would exercise its claimancy responsibility in event of a wartime emergency, and in this

connection is maintaining close working relations with the other agencies concerned. The Department is also cooperating with Commerce, Interior and ICC in the review of their standby plans and orders which have an effect on the production, processing and distribution of food.

Consideration is being given to the best methods for the domestic distribution of farm equipment and commercial fertilizer in an emergency since this is a direct responsibility of the Department.

## 2. Manpower

The Department of Agriculture develops and submits to the Department of Labor data which can be used to determine manpower needed on the farms and in food processing and distribution. These data are assembled currently and additional analyses have been made with reference to wartime conditions, both with and without attack, as a part of government-wide supply and requirements studies. Under certain conditions, manpower could be a limiting factor in our ability to cope with emergency situations.

Working in close cooperation with other departments and agencies, the Department participates in the development of lists of essential activities and critical occupations for use under current and wartime situations, and in the development of manpower programs which could be applied under wartime conditions.

Certain related activities are carried out under the Universal Military Training and Service Act, and the Reserve Forces Act of 1955. The Department cooperates with the Selective Service by providing production information useful in the proper classification of registrants engaged in agriculture, food processing and distribution. The Department also cooperates in the continuous screening of ready reserves. This is done by providing production and employment data on farm operators and assistants and on workers presently employed in food processing and distribution.

In addition, the Department works closely with other members of the President's committee on migratory labor in developing and coordinating activities relating to migrant agricultural workers and their families.

## C. Planning for Continuity of Essential Functions of the U. S. Department of Agriculture in a Wartime Emergency

Planning for the continuity of Department of Agriculture operations in event of emergency is also covered by DMO I-9. It is important that the area be given proper emphasis since it provides the administrative framework for the program work. Progress to date can be summarized as follows:

Major wartime essential functions of the Department of Agriculture have been identified.



Emergency headquarters organization has been determined and staffing for this organization at the primary headquarters site has been worked out. It should be noted that key personnel who would be active in an actual emergency are also responsible for planning in the pre-emergency period.

The primary headquarters relocation center for the Department, called "Repoint", has been established and equipped and arrangements have been made for living quarters for personnel and members of their immediate families. Arrangements have been made for immediate activation of this site in event of strategic warning.

Eight areas which the Department can use for maintaining liaison with the Regional Mobilization Committees of the Office of Defense Mobilization and the Regional Civil Defense Operations Boards of the Federal Civil Defense Administration have been established in the field. These are not administrative areas and will not affect the normal administrative reporting lines of the various agencies of the Department.

A USDA Regional Liaison Representative has been designated in each of the eight areas, along with necessary supporting staff which is used in pre-emergency planning as well as in an actual emergency. USDA Regional Liaison Headquarters have been established on a tentative basis.

Substantial progress has been made in the preparation of an operations manual which covers authorities, essential functions, organization, staffing, procedures, financing and other administrative matters. Appropriate parts of this manual completed to date have been issued to all in the Department of Agriculture who need them at headquarters and field levels.

## II. CIVIL DEFENSE PLANNING BY THE U.S. DEPARTMENT OF AGRICULTURE

The Federal Civil Defense Administration Delegation 2 assigns to the Secretary responsibility for:

1. Planning a national program and directing Federal activities concerned with research, diagnosis, strengthening of defensive barriers, and control or eradication of diseases, pests or chemicals introduced as agents of biological or chemical warfare against animals or crops. (This has been supplemented to include radiological defense of animals and crops.)

2. Planning and directing Federal activities, and providing technical guidance to states, in connection with an over-all food program aimed at maintaining adequate emergency food supplies for attacked or support areas.

3. Planning a national program, directing Federal activities, and providing technical guidance to states concerned with the prevention and control of fires caused by enemy attack in rural areas of the United States.

Federal civil defense activity is coordinated in the Department of Agriculture by the Assistant to the Under Secretary. Responsibilities relating to biological and chemical warfare against and radiological defense of animals and crops are assigned to the Agricultural Research Service. Work under the food phase of the civil defense delegation is assigned to the Agricultural Marketing Service, which works closely with the Commodity Stabilization Service. Responsibilities in connection with rural fires are assigned to the Forest Service.

A. Biological and Chemical Warfare Against and Radiological Defense of Animals and Crops

The Agricultural Research Service of the Department of Agriculture has the responsibility for the protection of the Nation's livestock and crops against biological and chemical warfare and research concerning protective measures, utilization of or decontamination of crops, animals or soils affected by direct radiation or radioactive fallout. The state-Federal cooperative programs for animal and crop diseases and insect pest control form the basis for this nation-wide protective service. The Department of Agriculture's nation-wide meat inspection service also provides protective measures of the nation's meat food supply against biological, chemical and nuclear warfare and with radiological surveys and laboratory controls assists in assuring a safe meat supply under conditions of national emergency.

The Agricultural Research Service cooperates and maintains close active liaison with the Department of Defense; Federal Civil Defense Administration; Department of Health, Education and Welfare; Central Intelligence Agency; Atomic Energy Commission; and the National Research Council on their activities pertaining to national emergencies.

Defensive or protective measures against biological warfare encompass research, diagnosis, control and eradication of foreign pests and diseases of plants and animals that may be intentionally introduced or the intentional spread of serious diseases or insect pests that are now present but restricted in distribution or under control.

The agricultural problems relating to nuclear warfare include the potential damage and hazards to the country from direct radiation and radioactive fallout on livestock, crops, soils and food products thereof.

Research is providing more rapid means of identifying foreign diseases of plants and animals. Research also includes development and improvement of protective biologics along with new techniques and materials for control and eradication. Limited research is being carried out on the effects of radiation and radioactive fallout on soil, water and the exchange and flow of radioactive elements from soil and water into the food chain.



Utilization research conducted for national defense includes the development of substitutes for strategic and critical items, including oils, drugs, cordage fibers and tanning materials needed by the armed forces, and new techniques for food processing and storage.

State and Federal animal disease regulatory officials, representatives from veterinary colleges and diagnostic laboratories have made considerable progress in establishing the organization and plans for dealing with emergency outbreaks of disease. Each state has an emergency animal disease eradication organization on a standby basis.

Farmers, livestock owners, county agents, veterinary practitioners, and agricultural specialists have been provided information relative to the ARS disease control services and explaining how these services apply to the emergency program. The importance of participation and cooperation by all has been emphasized. Information on the hazards of radioactive fallout on the farm has been developed and distributed as Farmers' Bulletin No. 2107, entitled "Defense Against Radioactive Fallout on the Farm". This publication suggests means by which the farmer can protect himself and family and his livestock from fallout and what he can do to minimize the effects and losses from radioactive material.

Instruction and training are being given on the recognition of foreign or unusual diseases through the Agricultural Research Service's special diagnostic schools, agricultural colleges, veterinary colleges, state and Federal regulatory officials, county agents, entomologists, and plant pathologists. Training in radiological defense as it pertains to livestock and their food products has been conducted. An expansion of this type of training and information is necessary and is being developed.

As training and information media, a number of colored sound movies have been developed on foreign and unusual diseases of animals and crops. These films are distributed throughout the country for training purposes. Colored slides showing the symptoms and pathology, means of recognition and control for a number of diseases of plants and animals are available.

## B. Food

The food part of the Federal Civil Defense delegation consists of two elements. First is that of planning and directing Federal activities, and second, providing technical guidance to states, both with the same end objective -- developing a unified program aimed at maintaining adequate emergency food supplies for attacked or support areas.

Supplying food to attacked or support areas is closely related to some aspects of the work done under the ODM assignment under Defense

Mobilization Order I-9, previously discussed. Under the assignment from ODM, for example, the Department of Agriculture has designated the agencies which will determine and claim emergency food requirements for major categories of use. The Department of Agriculture is the claimant for domestic non-military requirements but it will look to civil defense authorities for advice regarding civilian food needs for particular areas in a post-attack emergency. Before the areas ask for assistance, they would utilize food supplies which need no further processing and which are already in homes, retail stores and away-from-home eating establishments.

Ability of local civil defense authorities to help themselves depends fundamentally on adequate food planning at state and local levels. A number of states have developed food plans of one kind or another. The Department of Agriculture has reviewed a number of such plans in order to determine their adaptability and relationship to national plans and in order to develop the broad outlines of one or more basic plans which might be fitted by the states to their particular needs.

The Department formerly had a staff of five field men devoted to providing technical guidance to states in the development of the food aspects of their civil defense plans. Funds were not appropriated for this staff in the fiscal year 1958 but such guidance is being provided to the extent possible by field offices of the Department, and by guidance materials prepared in the Department and distributed through FCDA.

The Department is assisting FCDA in developing the food aspects of its survival planning projects. These projects undertake to develop unified plans for designated areas. The Department has developed a guideline statement entitled, "Determining Food Resources for Survival Planning Purposes". Assistance has been provided on the national, regional and project area levels in obtaining and evaluating food resource data essential to survival plans. This has included several projects to develop specialized data peculiar to the post-attack emergency food problem.

The Department cooperates with other FCDA services and offices in the development of plans relating to the food problem.

### C. Fires in Rural Areas

In carrying out its responsibility for rural fire defense, the Forest Service of the Department of Agriculture utilizes facilities of the Federal and State Extension Services, agencies of the Department of the Interior having responsibility for fire protection, and the State Forestry Services. For this purpose, a national committee has been formed, composed of representatives of these agencies.



This program is of vital importance to the total defense effort since the productive capacity of our farms, our pasture lands and our forests is dependent upon fully adequate fire protection.

In addition to this fundamental and primary function there is an important related need. Without question, shelter areas and evacuation routes for metropolitan residents will be in or through agricultural and mountain areas. Unless these areas are protected from fire, evacuation plans could be largely nullified.

Substantial progress has been made in the preparatory phases of this assignment. Guidelines have been prepared and distributed; planning committees have been organized in practically every state; the general problem has been analyzed and the resources available to meet that problem have been inventoried. Interim plans have been submitted for 29 states and territories and others are partially prepared. Preliminary operational plans have been prepared for each FCDA Region.

As these plans are improved and expanded, continuous technical leadership must be provided to the states in order to capitalize upon the part-time contribution of many thousand individuals at the state and local level essential to a complete planning job.

Outside the specific delegation but pertinent to the civil defense program is work being done by the Forest Service Fire Research Division. Following leads developed in the 1954 cooperative fire research project, "OPERATION FIRESTOP", aerial tankers for fighting fire from the air are being further developed; joint research with the Corps of Engineers, U.S.A., is perfecting equipment and techniques for laying long hose lines by civilian and military helicopters; another cooperative project with the Corps is adding to knowledge of mass fires and how to control them; systems for estimating potential fire damage areas have been developed and applied for ODM and FCDA; and advisory and technical services on rural and urban fire problems are provided currently for these agencies.

### III. CONCLUSION

By way of conclusion, it should be emphasized that there is a continuing need for careful defense planning. The Department is doing what it can and is making progress. Despite this progress, much remains to be done. Questions have been raised as to when the plans will be completed. With the changing and developing weapons, "complete" planning is difficult. However, through our planning we intend to be as ready as possible to cope with any emergency.

It should also be pointed out in conclusion that all of the major defense planning in the Department of Agriculture is tested periodically. The last major test exercise was held in June and July 1957. This involved a test of the adequacy of relocation centers as well as program operations. Additional tests of various kinds will continue to be held.



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